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MENTAL ALIENATION.

WE shall offer in this and the following number of our Journal the remarks on the above subject, offered by M. ANDRAL to his class in the University of Paris. They will be found useful by every medical reader, and, to all, fraught with an interest that always attaches to discussions of subjects connected with intellect, when conducted by eminent physiologists.

Anatomical Pathology of Mental Alienation.

I SHALL now proceed, gentlemen, to a subject fraught with difficulty and interest, and one, respecting which, the industry of some modern pathologists has supplied us with numerous and peculiar observations. In the first place, however, it is absolutely necessary for us to consider what it is that we expect anatomy to teach us. It has been denied by some eminent observers, that it could explain the disease in question. This is certainly a perfect and indisputable truth; but the proposition is equally applicable to disease in general, no matter how simple, how obvious, the anatomical characters may be. Indeed, if we except the phenomena depending on mechanical alterations (for example, the dullness of sound on the percussion of an engorged or hepatized lung, or the absence of respiratory murmur, where the bronchi have been impeded); we seek in vain for a manifest explanation of the phenomena of disease in the facts which anatomy discloses. It may be true that the glands of Peyer may be constantly altered in certain fevers; but does this alteration explain the events these fevers exhibit? Certainly not. All that that we are entitled to seek, is, to ascertain whether certain organic changes do not coincide with various phases and symptoms of the disorder; to find whether these changes are peculiar, or common to other diseases; and, lastly, whether they occur with such constancy as to enable us to predict that we shall find them on examination after the death of individuals who have labored under particular symptoms. Whenever we ascertain this to be the case, without seeking to explain, we are still rationally entitled to infer a certain connection between the symptoms, progress, and pathology of the disease, which must influence our ideas relative to its nature, treatment, or prevention.

To apply these general remarks to the subject before us, I may at once enter on the question, whether this peculiar connection can be traced between the living phenomena of mental alienation, and the changes of organization detected in the body after death. From the time of Morgagni to the present day, the attention of able observers has been directed to this investigation. Morgagni himself pointed out many alterations of the brain, detected in his dissections of the insane, but there

was nothing specific in his pathological facts, nothing which was not found in a multitude of other cerebral diseases. The authors which succeeded him, for a considerable time, all pursued the same route. Some found lesions such as those Morgagni detected; others found absolutely nothing. Between such opposing evidence it was not strange that the rational observers of facts should have derived the inference that the different indurations and ramollissements of Morgagni were but accidental complications; that the negative evidence of other anatomists was the most conclusive; and that, consequently, anatomy was mute respecting insanity and its varieties. Such, in fact, was the conclusion of Pinel; and, twenty years since, the experience of M. Esquirol, at La Salpêtrière, led him to participate in Pinel's opinion. Nevertheless, Esquirol went thus far, that he established the very frequent occurrence of various cerebral lesions in the brains of the insane. His pupils have since gone farther. They have seen and published many things which escaped the observation of their teacher; and M. Esquirol himself, keeping active pace with the progress of science, has also made a recent declaration of a modification of his earlier opinion. His latest memoir is to be found in the *Annales d'Hygiène Publique*, &c., of about two years since. His conclusions, however, are still fraught with the utmost caution; and he advances no specific pathological propositions on the subject. He finds organic lesions almost constantly in his recent dissections at La Charbonnière; while twenty years since these lesions either did not exist, or escaped his attention at La Salpêtrière.

Various other authors have also very recently published on these subjects. They agree in acknowledging the occurrence of organic lesions in the majority of cases, and some go so far as to point out specific organic changes. We shall enter fully into the consideration of this subject. If these specific organic changes be detected, it is a fair corollary of science to regard them as a cause of the affection. The writings of Foville, Calmeil, Fabret, and Bayle, are those which treat most decidedly the question before us; and on examining them, we find the authors agreeing in the following propositions:—*First*, that in mental alienation the brain invariably presents lesions which can be distinctly recognized; and, *Secondly*, that these lesions vary according to the acute or chronic form of the malady, and according to the character it assumes in its symptoms—whether the affection be simple, that is, confined to intellectual disorder, or complicated with lesions of sensation or motion. The legitimate corollary from these premises is, that there exists a connection between these symptoms and lesions, in the relation of cause and effect. Such are the conclusions of the authors I have named. Remember, gentlemen, that as for myself, I am but the narrator of their opinions. Without becoming a partisan, it is my business to lay them before you, and submit them to the scrupulous examination they merit. For if, on the one hand, it would be wrong to accept without scrutiny the statements of the older writers; if it would have been irrational to have concluded, with them, that anatomy could teach nothing, and that its labors should consequently be suspended, we must, on the other hand, be equally cautious how we admit every asserted discovery. We must in all cases proceed deliberately, registering the facts which have been proved, ar-

ranging their inventory, and patiently waiting until they are sufficiently numerous to afford true and tangible conclusions. We must not accept every isolated statement as a truth; but where facts agree, we must take note of the corroboration thus mutually afforded, and where they differ we must seek truth in ulterior statements. Such is the spirit in which I wish this and every similar question to be investigated.

Organic Lesions in simple Mental Alienation.

Let us see, then, what are the facts recorded, first in the simple alienation of the mind, without any derangement of sensation or motion: The organic lesion producing this change, if such exists, must be sought either in the substance of the brain, or at its periphery or surface.

And here let me premise, did we reason *a priori* on this subject, we might at once conclude that the organic cause of mental derangement was to be sought for on the periphery of the brain. The brilliant researches of recent authors on embryology and comparative anatomy, lead directly to this conclusion. If we look to the former, we find that in foetal life and early infancy, ere yet the brain begins to think, to exercise any mental function, we find the grey matter deficient, and the cortical circonvolutions scarcely existing. It is only with the appearance of the first radiations of intellect that the grey matter becomes distinct, the circonvolutions commence to be developed. As the intellect expands, again, we find these organic dispositions attaining proportionate perfection. Turn now to comparative anatomy, and how does it coincide with these phenomena of embryogeny? The grey substance disappears, the extent and number of the circonvolutions diminish, in strict proportion as we descend in the scale of animal organization. I repeat, then, gentlemen, that a ready *a priori* inference might be derived from these facts, respecting the probable pathology of mental alienation. But so far from allowing ourselves to be led into such assumptions, and to be prejudiced in our researches by these probabilities, however legitimate, we should, on the contrary, endeavor rather to dismiss them from our minds while pursuing the practical pathological inquiry; and when commenting on the statements of others, we should receive accounts of corresponding discoveries with more of hesitation than of eagerness, always recollecting how often our observation is deceived by our preconceived ideas and anterior studies.

Corresponding then with this *a priori* probability, we find the results obtained in M. Foville's pathological investigations pointing out the very alterations which embryology and comparative anatomy would lead us to anticipate. According to this author, the grey substance of the periphery of the brain is remarkably and *specifically* altered, while the grey matter of the interior of the brain is not at all affected. Again, this alteration varies in its characters according to the acute and chronic state of the alienation.

In the *acute* variety, according to the admirable description of M. Foville, founded on an immense number of dissections of the insane, the grey cortical matter is altered both in color and consistence. With respect to the first, if the brain be taken, the membranes cautiously separated, the periphery sliced, with great caution, with a razor or some

other exceedingly sharp instrument, remarkable alterations will be found on its surface, namely, marblings of various extent, shades of redness from rose to crimson, minute ecchymoses, and effusions not larger than a pin's head, scattered like sand among the structure of the grey matter. These appearances vary in intensity, from a degree barely perceptible to a redness like that of erysipelas. With respect to *consistence*, the external part of the cortical surface is generally indurated to a certain extent, while the contrary takes place in the inner portions, so that the cortical grey substance may thus be separated into two distinct layers. These appearances are most evident in the frontal, next in the parietal, and least in the occipital part of the brain.

In the *chronic* state all these appearances are more marked. The cortical substance is with facility divided into two layers; one external, of a dirty white, bleached, decolorized appearance, sometimes even of a silvery aspect. This layer, M. Foville states, may be lifted up like a membrane from the lower stratum, which appears as red as if covered with granulations. Occasionally, instead of these appearances there is perfect ramollissement of the whole of the cortical substance, and it is consequently impracticable to separate its strata. In the very chronic cases, especially in dementia, he has observed atrophy of the grey substance and of the cerebral circonvolutions?

This atrophy assumes two forms. In one there is a diminished volume of one or more circonvolutions, restricted to certain points; and in some cases the atrophied parts are replaced by little lacunæ containing serous fluid, in accordance with a law of formation to which I have often called your attention—namely, that defective parts are commonly replaced by cysts containing serous fluids. In the second form the atrophy manifests itself by the thinning of the substance of the circonvolution, especially towards the top, where, instead of its normal mode of expansion, it is folded in sharp plates like doubled paper, or the atrophy may be at the base of the convolution, leaving it absolutely pediculated. Sometimes, lastly, the grey substance disappears altogether. This atrophy is most frequent in the frontal region: sometimes it is confined to three or four convolutions of the parietal or vertical regions, and the deficiency is frequently replaced by the serous cavities already alluded to. In these cases, also, the color of the cortical substance may be altered, the superior layer being pale, and the inferior of a rosy color, the grey tinge having completely disappeared. It is remarkable, also, as being contrary to a general rule of the exemption of the internal grey matter from these changes, that in the form thus described the grey part of the cornu ammonis is often in a softened condition.

Here, then, if M. Foville's statements be correct, is a sufficient number of alterations peculiar to mental alienation. It is indisputable that such alterations have been found in the brain of the insane. If very frequent, they should be regarded as *specific*, for such are not found in other diseases. I have dissected hundreds of bodies, fibre by fibre, and might say molecule by molecule, and I, for one, never saw anything of the kind. We must, however, I again repeat, attend minutely to this description, in order to submit it to ulterior examination. Should the changes be found universal, we must seek the period at which they occur,

remembering always the wide difference that may exist between the anatomical characters and 'organic cause' of a disease. This must never be forgotten. Take scrofula, for example. One of its most prominent anatomical characters is abnormal developement of the lymphatic glands; yet you all know that this is not the organic cause of the disease.

With respect to the white substance, it is generally intact. It is sometimes injected, at other times very pale, but these are not *special*. They are common to alienation, and every other cerebral affection. The *optic nerve* is described to have been most singularly altered in a case of hallucination which fell under M. Foville's observations. He states it to have been hard, and quite transparent. As for the meninges in the acute state, there is often nothing the matter with them, or they may be infected with blood to a greater or lesser extent. In the chronic stage the alterations are scarcely worthy of remark—viz. occasional opacities and thickening of the dura mater, increased consistence of the arachnoid, albuminous effusion between its layers, and adhesion between its inner surface and the pia mater. M. Esquirol found adhesions between the dura mater and pia mater on the brain of the celebrated murderer *Leger*, whose case I have described in a previous lecture. Lastly, the circovolutions may be agglutinated together, and considerable quantities of serosity be beneath the pia mater.

It has been observed, too, and the remark is of signal importance with reference to the system of Gall, that the nutrition of the bones of the skull may become altered in consequence of the corresponding internal lesion. Thus, in the case of cerebral atrophy, two lesions of the bones may take place: first, the thickness may increase by the deposition of phosphate of lime; or, secondly, they may become atrophied also, the diploe disappear, the tables become thinned. When neither of these things takes place, the space is supplied by an effusion of serous fluid. This has been ascertained by M. Foville.

Organic Lesions in Mental Alienation, with Paralysis, &c.

I have now to notice briefly the pathological characters of the second variety of mental alienation—viz. that in which lesions of motion accompany the mental affection.

In madness, then, accompanied with paralysis, the grey substance, according to Foville, presented the same alterations as those already described. The white substance, according to Foville and Calmet, was, in several cases, perfectly normal. In some cases, again, it has been found remarkably altered, of a splendid white color and indurated consistence. I have already mentioned to you, before commencing this subject, M. Foville's statements respecting the separation of the brain into various folds or layers. Now in this paralysis, M. Foville states that they cannot be separated from each other any longer. This phenomenon must, of course, be submitted to further examination, before it can be admitted as a universal fact.

Besides the changes thus described, every possible variety of morbid lesion, especially cysts of every kind, may occur as complications of insanity, whether acute or chronic. In conclusion, therefore, *the present state of our knowledge of the pathology of madness may be enumerated*

briefly in the two following propositions :—1. In a few rare cases there is no appreciable alteration. 2. In a vast majority of cases there are alterations, some of which appear to be specific.

DR. SAYAGE'S ACCOUNT OF THE NEW LONDON EPIDEMIC OF 1832.

To the Editor of the Boston Medical and Surgical Journal.

SIR,—Agreeably to promise, I now enclose for your Journal a hasty sketch of the late epidemic of New London. During the prevalence of the disease, I was induced to visit that place in company with Dr. E. D. North (son of E. North, M.D. of N. L.), for the express purpose of witnessing an epidemic, and investigating the character of that disease. While there, I remained at the house of Dr. N., and found the physicians of the place affable, and ever ready to give any information respecting the subject of this communication.

Deeming the preservation of the history of certain epidemics important, and not being aware that a regular one of this has been recorded upon the pages of any periodical, I am induced to enclose to you the following, only regretting it had not come from the pen of one more competent. I will add, that this is merely an outline of the disease, and, as to its general features, it is but one of the many forms which it has at different times assumed. Here, *torpor* was its prominent feature; in other places, I am informed, it has been strongly marked by irritability, blended more with other diseases, and been much more protracted, so that some of the symptoms have continued for months, particularly the epigastric sinking—assuming the character of Good's *Cardialgia Symplicia*.

Yours, &c.

THOMAS S. SAYAGE.

Middletown, Conn., April 27th, 1833.

History of the Epidemic.

On the 3d of March, 1833, a malignant disease made its appearance sporadically in the city of New London, Conn. The first cases occasioned no small degree of perplexity to the physicians under whose care they came. The mode of attack and the symptoms were evidently peculiar, differing much in character from those of any other disease which had previously come within their observation. In this dilemma, an old and experienced practitioner, E. North, M.D., was called in consultation. By him the disease was recognized as one which had occurred epidemically twenty-four years before, in his own practice, in the county of Litchfield;—its type was, therefore, in time, detected, and an appropriate mode of treatment immediately adopted.

During the first three weeks after the irruption of the disease, one or two sudden deaths occurred, but occasioned no alarm to the inhabitants. About the fourth week, however, cases became numerous, and by the first of May the strongly-marked features of a malignant epidemic were developed, which soon called forth the awakened sympathies of the public. From this time its strides were rapid, till about the 25th, when its progress was arrested; the few cases which afterwards occurred were scattered, appearing at different points of the town. The force of the

enemy, however, may be considered as spent at the above date, and the subsequent cases were but his retiring footsteps. Three hundred cases are said to have occurred, 5 per cent. only of which proved fatal; and among the latter, in every instance, it seems, the constitution was broken down either by previous disease, old age, or intemperate habits.

The *precise origin* of this epidemic, like that of all others, must remain shrouded in obscurity, notwithstanding the etiological character of the age. *Why* this particular form of disease should have appeared in the city of New London, and at that *precise* period of time, are points involving mere speculation, the result of which cannot be in *fact*. Suffice it, therefore, to say, that no trace could be discovered to favor the idea of its introduction from abroad, and the physicians of the town were unanimously of the opinion that its origin and progress were entirely unconnected with contagion in the proper acceptation of that term. Is there any necessity of looking farther for the origin of this, or any other epidemic, than to the general law laid down in relation to sporadic and endemic diseases? viz.—a constitution having been formed favorable for the existence of disease, only common exciting causes are requisite for its development; and for the continuance of such disease, once produced, i. e. its epidemic character, a continued operation of these causes will be necessary. In regard to the epidemic in question, it is a well-known fact that the streets of the low and intemperate were its *birth-place*, and their dwellings its *cradle*; and upon this class of persons was its fury spent, for theirs was the condition most congenial to its existence and growth. It was unanimously identified, by the physicians of New London, with a disease which has appeared epidemically at different periods, throughout the New England States, the earliest account of which, it is said, is given by Drs. Danielson and Mann, in 1806. Their account is styled, 'The history of a very singular and mortal disease, appearing in Medfield, Mass.' Since then it has received a variety of names, more or less inappropriate. The one more recently assigned to it by Thomas Miner, M.D., of Middletown, Conn., I consider most appropriate, viz. 'Typhus syncopalis or sinking typhus.' The term *syncopalis* is derived from a symptom which is uniform and unequivocal;—this symptom appears prominent in every account or case of the disease I have seen. In New London the disease was characterized by *extreme exhaustion*, and *great sinking at the epigastrium*, attended with a *general torpor of the system*.

The usual mode of attack was with languor and lassitude, and more or less general debility, gradually or suddenly induced;—a peculiar weakness would be felt, upon the least exertion, in the joints, and about the lumbar region;—surface and extremities cold—perspiration cool and clammy—mind depressed—eyes and whole countenance sunken and peculiar in expression—pulse small and frequent, sometimes slow, and easily compressed—tongue cold and flabby, with indentations of the teeth upon its edges, its color sometimes red, but oftener pale, with a slimy coat varying from a pearly whiteness to a light brown—pain more or less severe in the head and over the eyes, or in some other part—

* For the different accounts, times and places of appearance of this disease, see No. 12, Vol. VI., of this Journal.

seated at one time in some internal organ, at another in the extremities—obscurity of vision—vertigo—nausea, or vomiting—an indefinable sensation at the stomach, called by some patients ‘a death-like sinking,’ by others ‘a feeling as if all was gone there’—‘dreadful distress’—‘die away feeling,’ &c. This epigastric sinking was a uniform symptom, and stands foremost among the pathognomic marks of the disease; it would come on by paroxysms, and when extreme was attended by an indescribable expression of the countenance, heightened in proportion to its severity, and highly indicative of inward anguish and distress. During the paroxysms, respiration would become difficult—the expirations short and quick, while the intervals would be longer, and the voice assume a deep hollow tone, or exist only in a whisper. Unarrested by medication, the disease was rapid in its progress. An increase in severity of symptoms, or a supervention of others more dangerous, would occur; as, e. g. extreme exhaustion—ice-cold surface and extremities—sometimes heat, but of the stinging kind (‘calor mordax’ of authors)—a morbid excretion upon the surface of a thick viscid matter—stomach sometimes irritable, more generally torpid—saliva thick and viscid—pulse small and frequent—laborious respiration—painful expression of the countenance—eyes sunk and suffused—low muttering delirium—paralysis of the muscles of deglutition—singultus—subsultus tendinum—lividity of the surface and extremities, coma, and death. It was not however thus regularly characterized, but, Proteus like, assumed a variety of forms, changing with the constitution, habits, and temperament of its victims. In one case it would counterfeit some slight affection, commencing with a gradual approach of languor and lassitude, with some mental uneasiness, vertigo, &c. In another, it would put on the more strongly-marked character of hysteria, or mania, and in one or two instances the patient fell, as if by some violent concussion upon the head.

The different modes of attack may be reduced to the general divisions of *sudden* and *insidious*. Cases of the first kind were marked by violent symptoms, such as great increase of muscular energy, general disturbance of the brain and nervous system, &c. These, however, though highly alarming to the bystanders, were by prompt medication much more susceptible of cure and rapid convalescence than the *insidious*. In the latter, from its gradual approach and peculiar character, the disease actually gave no alarm till a firm hold was obtained upon the system. The worst cases were strongly characterized by great torpidity of the whole system, and consequently by a proportional degree of insusceptibility to the action of remedial agents. This fact was strikingly manifested in the application of epispastics to the skin, of acrids or strongly-irritating substances to the mucous membrane of the mouth and fauces—in the want of peristaltic motion of the intestines, inactivity of the urinary organs, &c. In some few cases the most powerful epispastics of cantharides were inefficiently applied; clear brandy, hot drinks, and the strongest acrids, produced no sensible effect upon the mouth and stomach.

There were many slight cases presenting the peculiar character of the tongue, perspiration and general expression of the countenance, with epigastric uneasiness, &c. Such, though not regularly reported, were parts of the same epidemic, and required the same kind of treatment,

though less in degree. If these symptoms were allowed to continue, the patient might go for days without a violent attack, thus acquiring a strong predisposition to the disease, so that when the attack came it was likely to terminate in death or protracted recovery. 'The worst cases were those in which extreme exhaustion, faintness or syncope, was followed by delirium, or great muscular exertion, and finally terminating in coma; or in which this debility was followed by symptoms of hysteria, and coma, or by convulsions, then coma, or by coma itself.'

The essence of the disease seemed to be a lesion of the brain and the nervous system, its weight sometimes preponderating in the former, but most generally in the latter. This was evident from the absolute torpor of the whole nervous system from the beginning. Its duration varied from two to five and seven days.

Diarrhœa rarely attended—not oftener, it is said, than one case in ten; and unless this symptom did exist, the state of the bowels required no attention. Indeed all evacuations in the commencement of the disease were considered undesirable, and as a general rule dangerous—days and even a week were commonly allowed to pass without any intestinal discharge. Cases of gastric irritability were also rare, and when occurring were considered rather as anomalies or exceptions to the general rule. In such cases there was probably a suspension of nervous energy in the stomach, so that when exposed to almost any exciting cause, that viscus was ready to take on an inverted action.

The petechiæ or spots, which have given origin to the old name of 'spotted fever,' were even more rare than diarrhœa or vomiting. I saw but one case, and that was well marked. The patient was a female, about 40 years of age; the spots were numerous, their color and appearance analogous to those of a 'blood blister,' with the exception of no cuticular elevation, and they were about a line in diameter, and perfectly distinct beneath the mucous membrane lining the lips. This effusion, which seemed to be situated between the cuticle and cutis vera, has been termed by Dr. Strong, of Hartford, 'blind hemorrhage.'

TREATMENT.—This was founded upon the following characteristics of the disease, viz.—a deficiency more or less of vital energy, a corresponding degree of unequal action in the system, and the absence of reaction. The indications consequently were, to obviate this deficiency of vital power, and to equalize the action of the system. By the energetic and proper fulfilment of these indications, reaction would readily appear. The following is an epitome of the treatment adopted in New London.

The patient was put immediately into bed, and there kept till all danger was passed; hot bricks, or bottles of hot water, were placed by his sides, legs and feet—or warmth was communicated by the conveyance of heated air, or the vapor of burning alcohol, under the bed-clothes. To co-operate with other means, as counter-agents, the topical application of acrids to the feet and epigastrium &c. was made, as capsicum, mustard and cantharides. Internally were given opium, camphor, hot aromatic and alcoholic drinks, wine, tinct. cantharides, Fowler's solution, &c. These, in general terms, were the means employed in the treatment of this epidemic; and when properly adapted to cases and circum-

stances, the result was signal success. The cases were rare in which large doses of opium or alcohol were required. The milder ones seemed to receive sufficient treatment by the production of a free and uniform diaphoresis, with moderate counter-irritation and stimulation from the less powerful agents—but in *all* cases, whether mild or severe, the early production of a uniform and healthy perspiration was considered as a 'sine qua non' to the *speedy* breaking up of the disease and *rapid* convalescence of the patient: it was taken as a *test* of the system, announcing at once to the physician that his patient had emerged from a state full of danger to one less so; it told him that relief was obtained from inequality of action and functional derangement, that the system was brought to a point, at which it could avail itself of *what remained* of its weakened energies, and which was most favorable for the specific action of remedial agents in supplying the deficiency. This condition of the system constitutes *reaction*, and the articles best adapted to its speedy accomplishment are those possessing a diffusible action, as alcohol, wine—the essential, aromatic, and acrid oils—*hot* aromatic and alcoholic drinks, &c. conjoined with counter-irritation externally. The more points of the system we can act upon at once, the sooner shall we effect our object. Some of the narcotics, or articles combining the stimulant, nervous, and diaphoretic powers, or the judicious blending of these operations in the administration of different articles, constitute one set of means of fulfilling most easily and readily this important indication. Among this class of agents stand foremost opium, camphor, alcohol, &c. These are indicated, likewise, more or less in every stage of the disease. When this uniform and healthy perspiration is established, our efforts should be so far relaxed as merely to keep up the natural temperature of the body, or a gentle moisture upon the surface. Excessive diaphoresis, in such cases, will become a *reducing* agent; of this, however, there will be no danger in the hands of a judicious practitioner. There is a *constant tendency* in this disease to a fatal termination. This tendency is manifested in coldness of surface and extremities, epigastric sinking, &c.; such symptoms should be invariably watched, assiduously guarded against, and promptly obviated when they occur. The stage of reaction having been fairly established, all medicines should be exhibited in adequate and *uniform* doses, at *regular* and *short* intervals. The system should be *kept constantly* and *uniformly* under the influence of the medicines, which is the only way of avoiding these dangerous and often critical symptoms.

In some cases, Fowler's arsenical solution was found effectual in subduing a severe paroxysm of gastric sinking, both in the attack and course of the disease. It likewise seemed a powerful auxiliary to the *speedy* and specific action of other remedies. In confirmation of this, the following case may be related. Mrs. W., aged about 50, was severely attacked. Dr. N. was called, and having perseveringly pursued the course already described, without effect, he gave ten drops of the arsenical solution. An almost immediate change was perceived in the whole expression of the patient's countenance, and a subsequent yielding of the symptoms soon occurred. So great and *speedy* was her relief, that she became at once desirous of knowing what 'that last medicine' was. In

reply to her request, said the Dr., 'You shall know, if you will tell me how you felt after taking it.' Her answer was, 'O, it touched the very spot.' The value of arsenous acid in some forms and stages of this disease, is fully substantiated by the repeated experience of Dr. North, of New London, as well as that of many other eminent practitioners. Professor Tully, of Yale College, says, 'I have frequently known persons, apparently in a dying state, with coldness of surface and extremities, speedily restored by arsenous acid; warmth of the system and arterial action were soon brought about. I know of no article in the *materia medica* which will restore so readily the heat of the body in low typhoid diseases, as arsenous acid.' In some extremely torpid cases, great relief was thought to have been obtained, in paroxysms of gastric sinking, from the firm pressure of a bottle of *hot water*, or a *hot brick*, upon the epigastrium.

In persons of intemperate habits, where the susceptibility of the stomach to the action of alcohol was lost, tinct. cantharides and the acids, as capsicum, &c., were efficient.

The only sequel to this disease, unless there were a strong predisposition to some local affection, was a train of obstinate and unpleasant symptoms, indicating a previous lesion of the nervous system—such as languor and lassitude, fatigue or exhaustion upon slight bodily exertion, inability of fixed thought, disinclination to mental exertion, agitation or tremors from sudden impressions, disturbed sleep, derangement of the digestive organs, &c. These symptoms, with that state of the tongue, expression of the countenance, morbid action of the capillaries, &c. peculiar to this disease, will often become protracted, and unyielding to the usual remedies. They are peculiarly troublesome in highly susceptible patients, or those of the irritable temperament. In this state of the system, exercise, both of body and mind, seems to be unattended with that benefit it affords in the sequel of many other diseases; much exertion, therefore, of any kind, is contra-indicated in such cases. The exercise should be rather of a passive nature than otherwise. As a remedy for these 'nervous symptoms,' the most effectual article I have known given is the sulphate of morphine, with extract belladonna sufficient to form into pills. If uniformly given, it will procure placid sleep; and accompanied with generous but proper diet, it will usually obviate this troublesome condition of the system. In dyspeptic cases, conium and iron, in connection with the sulph. of morphine, are very efficient.

BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON, MAY 8, 1833.

A wise man said unto his son,
 'Leave off your clothes when May's begun.'
 A wiser said unto his son,
 'Leave them not off till May is done.'

WHEN one or two hot days come in April or May, they are sure to be followed by colds and coughs in abundance. Old as the world is, uniform as has been the experience of every year, and almost every indivi-

dual, the lesson is not learnt that flannels, in our climate, should never be left off till June. The maxim given above is very old and rather lame, but one that all will find their account in regarding. With us there is no season in the year so changeable as the spring, and the suddenness of the change from heat to cold is usually proportionate to the excess of the former. When, therefore, the heat is oppressive in the spring, it should be regarded as a prognostic of a great and sudden change, when, more than in any other circumstances, our flannels will be of use to us. Steady, settled warm weather cannot be depended on until after the first of June, and till then the under garments of winter should never be left off, even if a day or two occur of 83 or 85 degrees. Be slow to put them on in the autumn, but be slower to leave them off in spring.

In the foregoing paragraph we have spoken, it will be observed, of flannels—of under garments. If the heat is oppressive, sufficient relief may be obtained by laying aside the surtout, the pelisse, or the cloak. But even these should never be left far off. At an unexpected moment they will surely be required.

The necessity and even the expediency of adapting the clothing to the changes of the season, has been questioned by many, and there are some that make no difference in dress through all the variations of the year. This is a bold experiment, and may, in a few cases, be successful. But in our climate, where the suddenness of the changes of weather is the source of such an immense proportion of our diseases and deaths, it is an experiment few would be justified in trying; and of these few, a large proportion would have cause to repent it. The trouble of a constant adaptation of the dress to the weather would indeed be intolerable; and it is for this very reason, more than any other, that we advise the only uniformity which is prudent and safe. It is to avoid the necessity of an hourly regard to these matters that we would advise the non-conductors of heat, that have saved us from suffering the chills of winter, to be still employed to save us from the sudden changes of spring. In the former season we have no temptation to be without them; in the latter, the temptations are frequent and strong, and it is therefore we are called to urge the importance of resisting them.

When we write of leaving off flannels, we would not be understood to sanction an entire change in the immediate covering of the skin. At all seasons, animal wool is the most natural and most proper covering for the cutaneous envelope of the body; and, for flannel, should be substituted some thinner and more porous article manufactured of the same material. The best we can name, and one we have recommended on a former occasion, and one, too, the excellence of which we know by many years' personal experience, is common bunting, such as is sold by ship chandlers for making flags. This bunting is thin, light, very porous, and well calculated to keep up an agreeable friction on the surface, which

is greatly productive of health as well as comfort. Waistcoats made of this substance should be worn from June to November or December, by those who wear flannel next the skin during the remaining months in the year.

Those animals whose dress is regulated for them by their Maker, are not stript of their hair or wool on the approach of summer; nor is their winter garment exchanged for one of different material. It is exchanged only for a thinner. Nor is the human skin an exception to the general rule. At all seasons its immediate covering should be of the same nature—it is offended and it suffers by the unnatural succession of woollen, cotton and linen, to which many and perhaps the majority of persons subject it. Accustomed to one stimulus, it acquires a uniformity and permanence in the exercise of its peculiar functions, so that slight causes derange them not, and, if casually arrested, they readily resume their wonted course and vigor.

Independently of the advantages alluded to, as resulting from the use of bunting next the skin in summer, it greatly promotes the comfort of the wearer by keeping up a uniform perspiration, which all know to be a great relief in summer, and by preventing the adhesive matter evacuated by the skin from lodging on its surface and obstructing its numerous outlets. In it, we may enjoy without danger the cool and refreshing breezes of a summer evening, and we may rest from exercise or labor without the chilling sensation produced by wet linen matted on the surface. There is indeed both security and pleasure in this practice, which, once pursued, no one we think will consent to abandon.

ON FITS AND SUDDEN DEATH, IN CONNECTION WITH DISEASE OF THE KIDNEYS.

At a late meeting of the London College of Physicians, Dr. Wilson presented a very instructive paper on the above subject, some account of which we shall offer the reader as related in the Medical Gazette.

The author began by laying down the general position, that in the pathology of sudden death, as well as in physiology, and in general medicine, the clue of the physician is in the blood—the material by whose integrity we live—by the waste or spoiling of which we die. It was with a view of illustrating this general idea that the subjoined cases were related, in which a death of greater or less rapidity seemed to have been transmitted from the kidneys through the blood to the other organs. The importance of the kidneys, in regard to the *constancy* of their operation, was pointed out, and the propriety insisted on of judging of the value of their influence, not by what they throw off, but by the blood which they return to the circulating mass, for there is no organ by which the blood is so much modified in quantity and in quality as by the glandular structure of the kidney. The well-known fact of coma supervening upon retention of urine was adduced, as showing the extent to which the brain was influenced by the kidneys—an influence held by the learned author

to be produced upon it through the medium of the blood, rather than by 'nervous sympathy'—the common expression, and supposed explanation. While all admit the general connection between the kidneys and brain, yet few, said Dr. Wilson, are aware 'how rapidly, entirely, and fatally the gland may influence the nerves in their assemblage—which is the brain.' For several years he has been in the habit of directing attention to the views here laid down, as opportunities presented themselves in the wards of St. George's Hospital, and some recent dissections have tended to confirm the justice of his opinions, as well as to show their value in reference to questions connected with sudden death—often an important subject of investigation in forensic medicine.

The following account is dated August 13, 1831. Mary Ransom, a female patient, admitted under Dr. Wilson's care at St. George's two days before her death. Case had been reported as 'pains, with swelling of the limbs.' The complexion was very pallid, and the general aspect very sickly. The morning after admission she was seized with what the nurse called 'a fit.' Later in the day she was found by Dr. Wilson in a state of insensibility, with stertorous breathing. Next day she died. Her friends reported that she had had a paralytic attack three weeks previously, and had been 'very low' for three months. The head was first examined, in consequence of her having died apoplectic. There was no effusion, no lesion, nor anything that could elicit a remark except that the brain was pale and bloodless. The author observed that Dr. Bright, in his splendid work on pathology, had adduced several instances of arachnitis, with effusion coincident with disease of the kidney; but in the cases to which he himself was then directing attention, there existed no alteration in the structure of the brain. The large veins were 'surprisingly' empty, and there was no fluid in the ventricles. Dr. Wilson turned with eagerness to the kidneys. In both the cortical portion had disappeared, while a smooth firm light-brown homogeneous mass had been substituted, leaving no remains of the original texture, but resembling common size pretty closely. The tubular and mammillary structures had also undergone great change, and in fact had nearly disappeared. There was a large irregular 'pocketed' cyst in the left kidney, communicating by numerous pouches with the pelvis of the kidney, and containing some limpid fluid. The bladder was empty. The left ureter had become distended, from which it is inferred that its canal lower down had been obliterated, the bladder being also much thickened at the entrance of both ureters. The lungs and heart were sound. About 3 vi. of light red fluid were found in the pleura. The cervix of the uterus was nearly destroyed by ulceration. In this case, though the actual stock of blood must have been wasted by the uterine discharge, yet the change on which the 'fits' depended, the author had no hesitation in attributing to the state of the circulation resulting from the disorganization of the kidneys.

A young gentleman was affected with great and constant languor, hesitation of manner, general discomfort, and occasional sense of weight in the chest. His tongue was always furred, and his complexion of a deep dull yellow. He died on the 6th ultimo, having been able to walk out a week before his death. On his return home on this last occasion, he had complained of shortness of breath, and next morning he was found in bed insensible, and with stertorous breathing. So urgent were the indications of pressure on the brain deemed by those who first saw him, that fifty ounces of blood were taken from the arm. He recovered his senses, and

lived for a week without fits or palsy, but with symptoms of stupor. A small quantity of blood was again taken from the arm; all, except a minute portion of that taken last, was thickly buffed. No lesion was found in the brain, and no effusion. The veins and sinuses were empty, but of surprising capacity, and this remark was proved by Messrs. Lane and Harrison, who conducted the examination, to apply to all the veins of the body *except the renal*. The kidneys were shrunk within one-fourth of their average size, and scarcely any part of what remained exhibited the appearance of healthy cortical structure. There were several ounces of pale fluid in the bladder, which coagulated on the application of heat and nitric acid. Nearly a pint of serous fluid in left pleura; lungs much loaded with frothy serum; heart large, but healthy; large coagula in right cavities from jugular veins, which were of immense size. In this case, as well as in some others which were adduced, wherein the kidneys were diseased, the blood was 'exceedingly' buffy, although no appearances presented themselves which admitted of being referred to inflammation.

Five additional examples were mentioned as having occurred within the author's observation, in which death, more or less sudden, and for the most part preceded by 'fits,' had taken place, no effusion nor lesion being found within the head, but disorganization presenting itself in the kidneys of a nature to have interfered with the discerning powers of the glands; and the position strengthened by reference to a case in the last number of the Medical Gazette (Feb. 23d), in which Dr. Elliotson remarks that in the only case of apoplexy connected with suppression of urine, which he had ever opened, there was neither fulness of vessels nor effusion about the brain.

The inferences drawn from the foregoing facts relate to the importance of the kidney 'as an organ of the circulation,' by its influence on the quality and quantity of the blood. On the condition of the vital fluid in these respects, constantly and necessarily depends the business of the brain, heart, and lungs. The exact changes of the blood may require farther investigation, but the presence of the urea, and the deficiency of albumen, are those which have hitherto chiefly attracted the notice of Dr. Prout and Dr. Bright, the two highest authorities on questions of this nature. Dr. Wilson's object was rather to insist on the intimate, constant, and vital connection of the brain, lungs, and heart, with the kidneys, through the medium of the blood, as illustrated by the morbid anatomy of that gland; and to draw from this the inferences, that in the treatment of all cases of apoplexy, epilepsy, hydro-thorax, anasarca, the state of the kidney ought to be fully taken into the account; and that in all cases of sudden death these organs ought to be examined, whether disease be found elsewhere or not. Dr. Wilson farther alluded to the obvious connection between some varieties of hysteria and the urinary secretion, and inquired whether—seeing the nervous system is thus so much influenced by it—the 'function of sleep' may not also have some relation to the effect produced by the kidney on the blood. A few years ago (he observed) scarcely any one would have thought of seeking for the cause of epilepsy, dropsy of the chest, or disease of the heart, in the structure of the kidney; but that hereafter the attention of pathologists will include this investigation, he regards as one of the many proofs that physis is fast becoming a science, and that its practice henceforth is likely to rest on a less questionable basis than mere assertion, however positive.

Preservation and Reproduction of Leeches.—M. Moreau, of Angers, has communicated to the medical journals the important discovery, made by M. Batta, lieutenant in the revenue police, at Saint Seurin, of a new and effectual method of preserving these valuable animals. It consists in placing them in a box, about three feet square, half filled with layers of rich homogeneous French soil. At the bottom of this box is inserted a small plate of tin, pierced with minute holes, and the top is closed with linen in order to prevent the escape of the leeches. The earth is moistened with water every eight days. By this process he has preserved the same leeches several months, and has even seen them reproduce. In a second letter on this subject, M. Moreau states the results of some of his own experiments on the matter. Twelve leeches were placed in one of these boxes several months since, all in a state of emaciation and debility from protracted abstinence. On examining the box a few days since, nine of the leeches were found in full health, increased in size, and there were also found a great number of ova, and minute full-formed leeches produced in the box itself. The earth proper to be employed is of a reddish-brown color, and possesses a strong power of imbibition. It must not lie dry, pulverulent, or be mixed with the roots of grass, small stones, bits of wood, &c. The temperature of the place, too, M. Moreau deemed of importance to be taken into consideration. In the successful experiment now detailed, the temperature was maintained at about 50 deg. Fahrenheit.—The druggists who trade with our East and West Indian possessions, would do well to submit these important facts to immediate experimental investigation.—*London Lancet*.

External application of Quinine.—Several cases of intermittent fever are recorded in the *Lancet*, which yielded to the external application of sulphate of quinine. A blister was applied over some part of the epigastric region; when it had risen, the cuticle was removed, and the surface slightly sprinkled with the sulphate and dressed with simple ointment. An absorption of the salt soon took place, and in a majority of the cases arrested the disease. This is a fact to be remembered, since there are instances in which its internal administration is inadmissible.

Wax from the buds of the Poplar.—An extensive land owner in Flanders is said to have succeeded in obtaining a quantity of wax, by putting the buds of the poplar tree into bags, and submitting them to pressure. The wax is of good quality and has an agreeable perfume.—*Repert. Pat. Invent.*

Box-wood a substitute for Hops.—M. Du Petit Thouars lately stated to the Philomathic Society of Paris, that more box-wood than hops was employed in making almost all the beer brewed in Paris. Box-wood contains a powerful sporic principle, with a bitter taste, which has received the name of *buxinia*.—*Ibid*.

Whole number of deaths in Boston for the week ending May 3, 19. Males, 10—Females, 9. Of old age, 1—drowned, 1—inflammation on the brain, 1—bilious colic, 1—worms, 1—infantile, 2—dysentery, 1—intemperance, 1—consumption, 4—fits, 2—inflammation of the bowels, 1—teething, 1—disease of the heart, 1—putrid sore throat, 1.

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